SATELLITE REMOTE SENTING, ITS APPLICATIONS AND CAPABILITIES TO THEMATIC CARTOGRAPHY

A CASE STUDY

ABSTRACT

This paper deals with the capabilities of Satellite Remote Sensing and its applications in Cartography for preparing various thematic maps of the study area. The study area covering 69,479 hectares in the districts of Udhampur and Doda of Jammu & Kashmir, India to study the various land use and different vegetation types for better forest management & sustainable mountain development.

Visual interpretation of SPOT (MLA) of 1993 on 1: 25,000 scale is used for identification of different vegetation types, using standard interpretation techniques. LISSII data of Indian Remote Sensing Satellite (IRS1B) of March, 1994 was also used for the study. Visual interpreted maps covering 9 plates were digitized using GIS system. The major vegetation types identified include, Chir pine/Blue pine, Deodar, Oak, Fir, Karau, Banj and mixed types, besides these agricultural land, wastelands, water bodies and others were also identified. The vegetation types identified and mapped is divided into 4 density classes depending on canopy cover.

Using the ARC PLOT module all the plates covering 5'X5' graticule were generated. The symbols available in the library and the newly generated symbols were used to depict different categories. The drainage details and Patnitop Development boundary were also overlayed on the land use/land cover maps. The final interpreted map has been used to generate final colour coded map using GIS for representation of different themes. This gives the area of different categories accurately and in a faster way.

Accuracy of the maps were also calculated using **Kappa (K)** Coefficient:

$$K = (\theta_1 - \theta_2) / (1 - \theta_2)$$

Based on the resource maps prepared using Satellite data and limited ground truth verification, few suggestions were made for preparation of Land Use development plan of the region.